

izations fits satisfactorily the American plant, which has as we have seen, ovate sepals about two-thirds the length of the petals. It is more than probable that the elements included by Trautvetter in his var. *leiocarpus* were quite different from each other, if not specifically distinct. When to this fact is added his vague and fragmentary characterization and the great geographic distance of the Siberian station, the treatment of the American plant as a separate species seems to be fully justified.

R. Allenii possesses a curious and interesting habital resemblance to the plant of southern Missouri and adjacent Arkansas, which was described as *R. abortivus*, var. *Harveyi* Gray, Proc. Am. Acad. xxi. 372 (1886), and which has since been raised to specific rank by Dr. Britton. The northeastern plant has, however, a decidedly lower stature and rounder petals. The marked difference of geographic range and habitat would furthermore render specific identity extremely improbable.

GRAY HERBARIUM.

PHYCOLOGICAL NOTES OF THE LATE ISAAC
HOLDEN, — II.

EDITED BY F. S. COLLINS.

(Continued from p. 172.)

Lyngbya subtilis Holden. 774, 779. Seaside Park. Dec. "This appears to have filaments attached at the middle. Can find no terminal hairs. Has it any chroococcoid stratum except the *Pleurocapsa* with which it is associated and upon which it appears to be epiphytic? Escaped hormogonia U-shaped. Branching?."

L. lutea (Ag.) Gomont. 939, 1060, 1473, 1501, 1507. On woodwork between tide marks, below Yellow Mill Bridge; on turfy bottom at Seaside Park; among *L. aestuarii* (Mert.) Liebm., Cook's Point; on sandy mud, Charles Island. May–July, Oct.

Symploca hydnoides Kütz. 862. With other minute algae in Yellow Mill Pond. Aug.

Plectonema terebrans Born. & Flah. 861, 869. In marine shells with other algae, Harbor. Sept., Oct.

Hydrocoleum glutinosum (Ag.) Gomont. 664 = P. B.-A. 453, 1033. On iron piles, Black Rock Beacon. July, Aug.

H. Holdenii Tilden. 1194, 1195, 1326, 1367 = P. B.-A. 602, 1464. "Forming a gelatinous tubular coating around old stems of *Spartina* in a brackish ditch." Cook's Point. May, Sept.

Microcoleus chthonoplastes (Fl. Dan.) Thuret. 881, 1508. Seaside Park, forming a thick coating on turf near high water mark; Cook's Point, in sheets, on sandy bottom between tide marks. Sept., Oct.

Anabaena torulosa (Carm.) Lagerh. 339, 1119. On mud on margin of marsh pools, Cook's Point; on muddy sand, near high water mark, among *Spartina*, shore of The Gut. June.

A. variabilis Kütz. 704, 709. With *Oscillatoria princeps* Vauch, etc., Fresh Pond. Aug.

Nodularia spumigena var. *major* (Kütz.) Born. & Flah. 1458, 1459, 1460, 1461. Marsh pool, Cook's Point, filaments scattered among *Lyngbya*, *Hydrocoleum*, etc., May 14. "No spores observed." May 20. "No spores yet." May 28. "Spores have appeared, proving var. γ *major* Bornet & Flahault."

Microchaete grisea Thuret. 765. On stranded stump, Seaside Park. Nov.

Mastigocoleus testarum Lagerh. 709 $\frac{1}{2}$, 861. In shells, Fresh Pond. Aug., Sept.

Amphithrix violacea (Kütz.) Born. & Flah. 756. On stones, Fresh Pond. Nov.

Calothrix aeruginea (Kütz.) Thuret. 732 $\frac{1}{2}$, 1034. Forming a coating with *Enteromorpha* sp. on iron piles between tide marks, Black Rock Beacon. Aug., Oct.

C. confervicola (Roth) Ag. 703. On *Ruppia*, Fresh Pond. Aug.

C. crustacea Thuret. 155, 482, 483, 636 = P. B.-A. 10, 641, 714, 724. On algae and rocks, Stratford Shoals; Woodmont; Cook's Point. July, Sept., Oct.

C. parasitica (Chauvin) Thuret. 1127a. On *Nemalion multifidum*, Stratford Shoals. July.

C. pulvinata (Mert.) Ag. 147, 487, 967. On woodwork at or above high water mark, Black Rock; Stratford Shoals; on old hulk, Cook's Point. Aug., Oct.

C. scopulorum (Web. & Mohr) Ag. 153, 1128. On rocks, Stratford Shoals. July, Sept.

Rivularia atra Roth. 1220 = P. B.-A. 357b. On turf of *Spartina*, Charles Island. Sept.

R. nitida Ag. 651, 685, 728. On bank of outlet, Fresh Pond. July-Sept.

Isactis plana (Harv.) Thuret. 439, 726. On stones, Charles Island. Sept.

Monostroma crepidinum Farlow. 761, 763, 772, 1066. Seaside Park, on rocks; outlet of Fresh Pond. Nov., Dec.

M. Grevillei (Thuret) Wittr. 268, 279, 557, 794, 797, 801. Seaside Park; Cook's Point. March, Apr.

M. latissimum (Kütz.) Wittr. 14, 18, 310, 321, 333, 1244, 1353, 1356, 1456. Fresh Pond, on *Zostera*, *Ruppia*, etc. "Fronds of all sizes up to nearly 2 ft. long, some over a foot wide, some small ones looking like *M. pulchrum*." Cook's Point; Yellow Mill Pond. Apr., May.

Ulva Lactuca var. *rigida* (Ag.) Le Jolis. 1339, 1349 = P. B.-A. 407. On stones in pools and between tides, Seaside Park. Nov.

U. Lactuca var. *mesenteriformis* (Roth) Collins. 1354, 1355. Washed ashore, Yellow Mill Pond. Apr.

Enteromorpha clathrata (Roth) J. Ag. 1269. Fresh Pond. June.

E. crinita (Roth) J. Ag. X5, X10, X11. On turf near high water mark, Seaside Park; Fresh Pond.

E. erecta (Lyng.) J. Ag. 612. On *Fucus*, Woodmont. June.

E. Hopkirkii McCalla. 692, 719, 804, 806 = P. B.-A. 463. On *Zostera*, Milford Point; Fresh Pond. Apr., Sept. "At Fresh Pond in April this grew to the length of 2 or 3 feet in a week, forming long, ropy, confervoid strings, attached at base to pebbles (and shells) and floating on the surface. The long, monosiphonous branches and elongated tips, when fresh, float in the air like spider's webs."

E. intestinalis (L.) Link. 282, 311, 336, 950. Fresh Pond; Yellow Mill Pond. Mar.-June.

E. intestinalis forma *cylindracea* J. Ag. X7, X9, 1257. Seaside Park; Yellow Mill Pond. May.

E. Linza (L.) J. Ag. 316, 330, 821, 1359. Seaside Park. Apr., May.

E. Linza var. *crispata* J. Ag. X1. Brackish pond in Seaside Park. Apr.

E. minima Näg. 782, 808, X3, X8, 1245, 1255 = P. B.-A. 468, 1256, 1261. On stones and mussels near high water mark, below Yellow Mill Bridge; Seaside Park. Feb., May.

E. percursa (Ag.) J. Ag. 1260. Cook's Point, among other algae. May.

E. prolifera J. Ag. 823, 829, 1254 = P. B.-A. 470, 1258, 1264. Yellow Mill Pond, "Some specimens 6 or 7 feet long"; Seaside Park, on stones and shells; Fresh Pond, attached to firm sandy bottom and *Spartina* turf between tide marks; Cook's Point. May.

Ilea fulvescens (Ag.) J. Ag. 33, 379, 687, 767, 755, 777, 1196. On rocks between tides, Seaside Park; on timber at shipyard, Cook's Point; Fresh Pond; Long Beach. May, June, Oct.-Dec.

Protoderma marinum Reinke. 1483a. Seaside Park. Jan.

Ulothrix flacca (Dillw.) Thuret. 558, 912, 915, 1077, 1079. With *U. implexa*, on rocks not far from high water, Woodmont; on *Fucus*, Seaside Park. Mar., Apr.

U. implexa Kütz. 558, 792, 793, 799, 810 = P. B.-A., 115a, 815, 1172. Woodmont, with *U. flacca*; on stones and *Spartina*, Yellow Mill Pond; in brackish pond, Seaside Park. Dec., Apr., May.

Stichococcus marinus (Wille) Hazen. (*Ulothrix variabilis* var. *marina* Wille.) 1093. Ash Creek, near Black Rock, on bank overflowed at high water. Apr.

Epicladia Flustrae Reinke. 610, 691, 864. On polyzoon on back and legs of spider crab. June, Aug.

Hormiscia penicilliformis (Roth) Fries. (*Urospora penicilliformis* Aresch.) 232, 240, 256, 280, 309, 543, 555. On rocks and woodwork, near high water mark, Seaside Park; Cook's Point. Jan.-Apr., Dec.

Chaetomorpha aerea (Dillw.) Kütz. 27. On pebbles, Long Beach. June.

C. Linum (Fl. Dan.) Kütz. 688 = P. B.-A. 22, 1432. Long Beach, near Stratford Point; Salt marsh pool, Cook's Point. Aug., Oct.

Rhizoclonium riparium (Roth) Harv. 151. On rocks between tides, Stratford Shoals. Sept.

R. tortuosum Kütz. 1235, 1236. Forming a fleece on *Sphacelaria radicans*, etc., Seaside Park. Dec.

R. tortuosum forma *polyrhizum* Holden. 1266 = P. B.-A. 625. On firm bottom and on other algae, Cook's Point. June.

Cladophora albida (Huds.) Kütz. 34, 609. On stones near low water mark, Seaside Park. June.

C. albida var. *refracta* Thuret. 943, 1129, 1546. Cook's Point; Stratford Shoal; The Gut. May-July.

C. arcta (Dillw.) Kütz. 245, 266, 298, 308, 314, 785, 914, 1074. Seaside Park. Jan., Mar.–May..

C. expansa (Mert.) Kütz. 796, 830 = P. B.–A. 121. Brackish pond, Cook's Point. Apr., May. "Lives through the winter."

C. expansa forma *glomerata* Thuret. 1536. Fresh Pond. Aug.

C. gracilis (Griff.) Kütz. 46, 351, 356, 364, 848, 1374. Cook's Point, in muddy pools; Woodmont; Charles Island. June, July.

C. lanosa (Roth) Kütz. 1498. Charles Island, floating. May.

C. lanosa var. *uncialis* (Harv.) Thuret. 37. Stratford Shoal. June.

C. Magdalenae Harv. 1440. Charles Island. Nov. "Forming felty mats or turfs on sandy mud, among *Spartina*, near high water mark. Same grows on shore of Seaside Park. A cold weather plant, appearing in late autumn (as far as I know)." "Dec. 25. Cladophora No. 1440 was fairly abundant at this time."

C. Rudolphiana (Ag.) Harv. 12, 19, 148, 322, 331, 594. Fresh Pond, abundant on stones, *Ruppia*, etc. May, Sept.

Gomontia polyrhiza (Lagerh.) Bornet & Flahault. 861. In dead shells, Bridgeport harbor. Aug.

Bryopsis plumosa (Huds.) Ag. 57, 383, 624, 649, 675, 847, 1373. Penfield Reef; Breakwater; Seaside Park; Woodmont; Pool about high water mark, Charles Island. June–Aug.

Vaucheria litorea Ag. 1173, 1177, 1351. Abundant in very brackish pond, Seaside Park. Apr., Dec.

V. piloboloides Thuret. 663, 722, 1200. On muddy rocks below low water, Black Rock Beacon, July; "On shelly sand bottom near westerly extremity of sand bar running into harbor from near Pleasure Beach House, Alcazar, just below ordinary low water mark, in abundant tufts over several square rods." Sept.

Pylaiella littoralis (L.) Kjellm. 1447. Cook's Point. Unilocular sporangia, Apr.

Ectocarpus aecidioides Rosenv. 1497. On tips of *Laminaria Agardhii*, Charles Island. May.

E. amphibius Harv.? 332. On *Zostera*, and *Ruppia* Fresh Pond. May.

E. confervoides (Roth) LeJolis. 534, 539, 762, 765. Seaside Park, on *Fucus*, etc. Dec. "No. 762 on stranded stump; cells in largest filaments 20–30 μ , as long as wide; in ultimate branches about 12 μ , several times longer than wide. Plurilocular sporangia 18–30 μ wide, 75–125 μ long; branching alternate."

E. confervoides forma *brumalis* Holden. 542, 548, 1442 = P. B.-A. 576. On *Spartina*, stubble, etc., between tides, nearer high water mark, Seaside Park and Charles Island. Dec., Jan. "Extreme breadth of cells about 25 μ ; plurilocular sporangia of various lengths up to 150 μ or more, and in width up to 25 μ ; fronds mostly one or two cm. in height. I have never seen this form except in winter, mostly about Xmas time."

E. reptans Crouan? 650. On *Zostera*, Black Rock. July.

E. siliculosus (Dillw.) Ag. 1032, 1262, 1341. Black Rock Beacon; Fresh Pond; Cook's Point. May, Aug., Nov.

E. subcorymbosus Farlow.¹ 703, 720, 1230, 1340 = P. B.-A. 415. On *Ruppia*, with *Enteromorpha*, etc., Fresh Pond; in muddy pools, Cook's Point. Aug.-Nov. "About 1 mm. high; cells about 12 μ or a little more in diameter, 2-4 times as long. Branching alternate or opposite. When opposite the main filament often prolonged into a very long hyaline hair from the point of branching. Such a hair also frequently taking the place of a branch or forming the prolongation of an ordinary filament or branch. Plurilocular sporangia 18-25 μ wide, 60-100 μ long, terminal or lateral, the latter generally with a short stipe of 1-3 cells. Filaments much crowded at base, where they (and also hairs) spring from an almost parenchymatous mass."

Ascocyclus orbicularis (J. Ag.) Magnus. 874, 1521. On *Zostera* Yellow Mill Pond; Pleasure Beach. July, Sept.

Sphacelaria radicans (Dillw.) Ag. 149, 177, 880. Stratford Shoal, on rocks between tides; Seaside Park, on turfy bottom. Sept.-Nov.

S. cirrhosa (Roth) Ag. 510, 535. Seaside Park, on *Fucus* and *Polysiphonia*. Nov., Dec.

Desmotrichum undulatum (J. Ag.) Reinke. 575, 1100, 1104, 1252. Seaside Park, on *Zostera*, with *Halothrix*. Apr., May. Plurilocular sporangia, May.

D. Balticum Kütz. With *D. undulatum*, Seaside Park, with plurilocular sporangia, May.

Punctaria latifolia Grev. 812, 930, 931 = P. B.-A. 82, 936, 1111, 1192, 1248, 1250. Cook's Point; Seaside Park; on shells and *Zostera*. Apr., May.

¹ This quite distinct species has long been in the unsatisfactory position of a species distributed under a manuscript name but never published. Mr. Holden's excellent description may well be used to place it on a more stable basis.—F. S. C.

P. plantaginea (Roth) Grev. 817, 922, 928, 935 = P. B.-A. 81, 1073, 1089, 1105, 1237, 1247. Seaside Park, on stones and *Fucus*, just below low water. Apr., May.

Scytosiphon lomentarius (Lyng.) J. Ag. 819, 918, 1072, 1088, 1246 = P. B.-A. 323a. Seaside Park, on stones. Apr., May.

S. lomentarius forma *complanatus* Rosenv. 917, 1080, 1085, 1087 = P. B.-A. 174, 1176, 1178, 1238, 1243, 1489, 1509. Seaside Park, on *Zostera*. Mar., Apr. "May 5, The narrow compressed *Scytosiphon* (1087, 1095, etc.) becoming passé. Occasional old fronds of it floating on the surface, inflated."

Phyllitis fascia (Fl. Dan.) Kütz. 230, 537, 546, 547, 758, 802, 813, 929, 1068, 1090, 1272, 1344. Seaside Park; Cook's Point; on stones, mussels, and *Spartina* stumps. Nov.-June.

P. fascia var. *caespitosa* (Ag.) Farlow. 293, 294, 302, 305, 896. With the type. Apr., Nov.

Asperococcus echinatus (Mert.) Grev. 1253. Diminutive form growing on *Zostera* with *Desmotrichum*, *Halothrix*, etc. Seaside Park. May.

Stictyosiphon subsimplex Holden. 1342, 1365, 1366, 1368, 1462, 1465 = P. B.-A. 630. Cook's Point, in muddy marshy pools. Nov., May, June. "Noted fronds of lengths up to 5½ inches."

Desmarestia aculeata (L.) Lamour. 1491. Seaside Park. Apr.

D. viridis (Fl. Dan.) Lamour. 295, 299, 306, 313, 323, 568, 573, 783, 911, 916, 921, 923, 926, 927, 1084, 1094, 1098, 1179, 1180, 1239, 1240, 1350, 1362, 1484. Seaside Park. March-May.

Dictyosiphon fœniculaceus var. *Americanus* Collins. 304, 312, 814, 820, 937, 1114, 1496, 1506. On *Phyllitis* and *Scytosiphon*; Cook's Point, in marsh pools; Seaside Park; Black Rock. Apr.-June.

Elachista fucicola (Velle) Fries. 38, 586. Stratford Shoal; Seaside Park. May, June.

Halothrix lumbricalis (Kütz.) Reinke. 315, 328, 533, 569, 587, 1096, 1103, 1251. Seaside Park, on *Zostera*. Dec., Apr., May.

Castagnea virescens (Carm.) Thuret. 1101. On *Zostera*, Seaside Park. May.

Myriactis pulvinata var. *minor* Farlow. 865. On *Sargassum*, Seaside Park. Aug. "Apparently rather young. Only plurilocular sporangia; filaments up to 25 μ broad, but generally 10-18 μ ."

Leathesia difformis (L.) Aresch. 320, 327, 1112, 1116, 1502. On *Zostera*, Seaside Park; Cook's Point; Charles Island. May.

Mesogloia divaricata (Ag.) Kütz. 846, 867, 1143. Woodmont, on *Chondrus*; Seaside Park; Long Beach. July, Aug.

Chordaria flagelliformis (Fl. Dan.) Ag. 382, 422, 1106, 1113. On stones below low water, Long Beach; on *Zostera*, young, Seaside Park. May-Aug.

Stilophora rhizodes (Ehrh.) J. Ag. 419, 420, 644, 693, 1407. Attached to pebbles on sandy flats about low water mark or a little below; Long Beach; Black Rock; Milford; Charles Island. July, Aug.

S. rhizodes forma *contorta* Holden. 627, 1263, 1270. Fresh Pond. May, July. "Fronds contorted and entangled in dense bunches on stones in shallow water, about one foot deep."

Ralfsia Borneti Kuckuck. 1483b. Seaside Park. Jan.

R. clavata (Carm.) Farlow. 1510. On stones in pools, Charles Island. Apr.

R. verrucosa (Aresch.) J. Ag. 444, 484, 593, 678, 1224=P. B.-A. 325b.

Chorda Filum (L.) Stack. 647. Black Rock, young. July.

Laminaria Agardhii Kjellm. (*L. saccharina*, in part.) 489, 780, 1041, 1369, 1377, 1443, 1445, 1448, 1449, 1487, 1490, 1492, 1493, 1504, 1544, 1549, 1553. Washed ashore, Seaside Park; The Gut; Black Rock; Charles Island; Pleasure Beach; dredged, Stratford Shoal. Jan., Mar.-June, Oct. Fruit, Oct. "1449, Apr. 22, Old and new blade."

L. Agardhii forma *vittata* Setchell. 1467. Black Rock Beacon. June. "1518. June 30. Dredged from a depth of 2 or 3 fathoms at low water."

Fucus evanescens Ag. 297, 303, 592, 789, 805, 1078, 1086, 1091, 1370, 1488. Seaside Park; Woodmont; Apr.-June.

F. platycarpus Thuret. 157, 480, 490, 1380. Rocks about low water mark, Stratford Shoal; Woodmont; Cook's Point. June, Sept. Oct.

F. platycarpus forma. 1423, 1537. Woodmont. Sept. A form intermediate between the typical one and *F. Areschougii* Kjellman.

F. vesiculosus L. 1115, 1118, 1371. Long Beach; Seaside Park. June.

F. vesiculosus var. *spiralis* (L.) Ag. 1378, 1379=P. B.-A. 680. Chippy Island, near The Gut. June. "Growing unattached, in tangled bunches, along with *Ascophyllum Mackaii*, the latter in dense

beds, finely dissected, sterile. On grassy bottom above limit of ordinary high water, rarely producing little vesicles and attempts at fruiting. A beautiful plant when growing. It has very much the habit of *Ascophyllum Mackaii* and seems to bear the same relation to typical *F. vesiculosus* as *A. Mackaii* does to *A. nodosum*."

F. vesiculosus var. *sphaerocarpus* Farlow. 1372. Cook's Point. June.

F. vesiculosus var. *laterifructus* Grev. 679, 715, 764. Woodmont. Aug., Sept., Nov. "Resembles *F. ceranoides*."

F. vesiculosus forma? 1363, 1364. Cook's Point, on mussels near high water mark, in thick beds. "When young this appears to be a good var. *spiralis*; older it develops oftentimes abnormal vesicles; rarely fruiting." May.

Ascophyllum Mackaii (Turn.) Holmes & Batters. 281, 305a, 1082, 1097 = P. B.-A. 177. Mar.-May.

A. nodosum (L.) LeJolis. 800, 1455, 1457 = P. B.-A. XV. Seaside Park; Fairweather Island. Apr., May. "No. 800, hermaphrodite, young oogonia in same conceptacles with antheridia; oogonia comparatively few, on the same branched hairs as the antheridia; also sometimes arising in the regular way from the interior wall of the conceptacle."

Sargassum Filipendula Ag. 855, 1416, 1421, 1441. So. Norwalk; Seaside Park; on stones along the bar, Charles Island. Aug., Sept., Nov.

S. Filipendula forma *subdentatum* J. Ag. 1325, 1421. Sept. With the type.

Goniotrichum elegans (Chauv.) LeJolis. 179, 496, 497. Among *Sphacelaria radicans*, Seaside Park. Oct., Nov.

G. ramosum (Thwaites) Hauck. 1169. On *Ruppia*, among various small algae, Fresh Pond. Nov.

Bangia ciliaris Carm. 496, 507, 511, 532, 878, 888 = P. B.-A. 88, 889, 895. On *Zostera*, *Fucus vesiculosus*, *Sphacelaria cirrhosa*, etc., in company with *Goniotrichum*, *Erythrotrichia*, etc. Oct.-Dec. "We examined No. 887 this evening, and found numerous filaments fruiting. A cell forms a number of spores which escape from a lateral protuberance. The spores frequently lodge and germinate on filaments of the *Bangia*, giving it the appearance of branching."

B. fuscopurpurea (Dillw.) Lyng. 892, 894 = P. B.-A. 87b, 900, 901. On rocks and woodwork, near high water mark, Yellow Mill Bridge; Sea wall, Seaside Park. Nov., Dec.

Porphyra laciniata (Lightf.) Ag. 788, 1441b. On rocks, Seaside Park. Mar. Young plants, Nov.

P. leucosticta Thuret. 781, 784, 787, 791, 798, 1071, 1081, 1083, 1242 = P. B.-A. 376. On *Fucus*, rarely on stones, Seaside Park; Cook's Point. Jan.-Apr.

Erythrotrichia ceramicola (Lyng.) Aresch. 496, 725. With other algae on *Zostera* and *Fucus*, Seaside Park; Charles Island. Sept., Oct.

Acrochaetium Sagraeanum (Mont.) Bornet. (*Chantransia virgatula*, in part.) 17, 646, 701 = P. B.-A. 39, 708, 750, 757. On *Ruppia*, Fresh Pond. May, July-Nov.

Nemalion multifidum (Web. & Mohr) J. Ag. 1127. On rocks near low water mark, Stratford Shoal. July.

Gelidium crinale (Turn.) J. Ag. 712, 1539. Woodmont; Seaside Park. Sept.

Chondrus crispus (L.) Stack. 564, 1335. Woodmont. Cystocarps, Apr., Oct.

Phyllophora membranifolia (Good. & Woodw.) J. Ag. 1043, 1324, 1329, 1331, 1334 = P. B.-A. 379a, 1530. Dredged, Stratford Shoal; Penfield Reef; washed ashore, Woodmont. Aug.-Oct. Cystocarps, Sept., Oct.

P. Brodiaei (Turn.) J. Ag. 1042, 1330, 1332. Dredged, Stratford Shoal; Penfield Reef. Oct.

P. Traillii Holmes. 713. Sides of rocks, between tide marks, Woodmont. Sept.

Ahnfeltia plicata (Turn.) Fries. 26. Long Beach. June.

Sterrocolax decipiens Schmitz. On *Ahnfeltia*, No. 26.

Actinococcus subcutaneus (Lyng.) Schmitz. On *Phyllophora Brodiaei*, No. 1042.

Agardhiella tenera (J. Ag.) Schmitz. 176, 425, 434, 475, 493, 721, 759, 868, 962, 965, 972, 1029, 1148, 1338, 1410, 1411 = P. B.-A. 138, 1419. Seaside Park; Pleasure Beach; Cook's Point. July-Nov. Tetraspores, Aug., Sept., Nov.

Gracilaria multipartita (Clem.) Ag. 73, 423, 426, 682, 727, 852, 859, 875, 1037, 1478, 1479 = P. B.-A. 634, 1535. Seaside Park; Cook's Point; Fresh Pond; The Gut. July-Sept. Tetraspores, July. Var. *angustissima* Harv. much commoner than type.

Rhodomenia palmata (L.) Grev. 566, 1222, Woodmont; Long Beach. Apr., Nov.

Lomentaria uncinata Menegh. 400, 416, 430, 435, 442, 474, 695. Seaside Park; Stratford Point; Long Beach; Milford Point. Aug., Sept.

Champia parvula (Ag.) Harv. 436, 681, 856. Woodmont; Norwalk; Bridgeport harbor. Aug., Sept. Cystocarps, Aug.

Grinnellia Americana (Ag.) Harv. 55, 73, 370, 384, 387, 395, 398, 402, 404, 414, 427, 433, 623, 633, 653, 851, 854, 960, 963, 971, 1146, 1206, 1328, 1382 = P. B.-A. 593a, 1383, 1384 = P. B.-A. 593b, 1386, 1388, 1390, 1392, 1394, 1396, 1399, 1403, 1409, 1472, 1520, 1532, 1547. Floating, Seaside Park; Cook's Point; Pleasure Beach; On oyster shells and stones in The Gut. July-Sept. Cystocarps, tetrapores and antheridia, July. "May 9, Searched for Grinnellia but found none." "July, Young plants on Ascophyllum." "July 10, Floating very early in the season." "Aug. 10, No. 1409, old fronds with proliferations." "Aug. 25, No. 1532, old fronds covered with young plants from germinating spores."

Caloglossa Leprieurii (Mont.) J. Ag. 170, 171, 172, 175, 181, 545. Cook's Point. Oct., Nov., Jan. (See note under *Bostrychia rivularis*.)

Chondria tenuissima (Good. & Woodw.) Ag. 381, 418, 421, 857, 1136, 1142, 1401. On stones just below low water mark, Long Beach; So. Norwalk. July, Aug.

C. Baileyana Harv. 403, 406, 1028. On stones just below low water mark, The Gut. Aug.

Polysiphonia elongata (Huds.) Harv. 919. Seaside Park. Mar.

P. fastigiata (Roth) Grev. 479. On *Ascophyllum nodosum*. Woodmont. Oct.

P. Harveyi Bailey. 1534 = P. B.-A. 888. Charles Island. Aug. "On *Zostera*, natural color pink; sterile. (Reinsch's *P. Americana*?)"

P. Harveyi var. *arietina* Harv. 438, 866, 1541 = P. B.-A. 889. Flats near breakwater; Seaside park; Charles Island. Aug., Sept.

P. nigrescens (Dillw.) Grev. 317, 326, 488, 1046, 1193. Seaside Park; Cook's Point; dredged at Stratford Shoal. May, Oct.

P. nigrescens var. *affinis* (Moore) Harv. 563. Woodmont. Apr.

P. nigrescens var. *Durkeei* Harv. 853. Harbor. July.

P. nigrescens var. *fucoides* Harv. 944. Cook's Point. May.

P. Olneyi Harv. 441, 1134, 1135 = P. B.-A. 440, 1265, 1268, 1346, 1531. On rocks and shells, Fresh Pond. May, June, Aug., Sept. Tetraspores, May, June. "Dec. 12, in active vegetative condition; a large crop springing up, sterile."

P. urceolata (Lightf.) Grev. 338, 1361, 1500, 1514, 1552. Seaside Park; Charles Island. Apr.–June. Tetraspores, June.

P. urceolata var. *formosa* (Suhr) Ag. 242, 296, 300, 307, 562. Seaside Park; Woodmont. Jan., Apr.

P. variegata (Ag.) Zan. 70, 367, 373, 377, 386, 389, 394, 397, 413, 424, 467, 478, 492, 635, 655, 955, 1381, 1473, 1474 = P. B.–A. 639, 1477, 1528. Seaside Park; Cook's Point. July–Oct. Tetraspores, July.

P. violacea (Roth) Grev. 920. Seaside Park. Mar.

Bostrychia rivularis Harv. 169, 171, 172, 174, 180, 505, 545, 684. Cook's Point. Jan., Aug., Oct., Nov. "Up near high water mark where the stalks of *Salicornia* and a finish kind of grass stand thick together, mostly in the shade of *Spartina*, so that when left by the retreating tide these beds probably never become dry; there the bases of these plants and sometimes the bottoms of the sheaths of *Spartina*, and occasionally a little bit of *Fucus* are covered with a fine web of *Bostrychia*, among which are scattered fronds of *Delesseria Leprieurii*."

Rhodomela subfusca forma *gracilior* (Harv.) J. Ag. 561. Woodmont. Apr.

Dasya elegans (Mart.) Ag. 53, 66, 229, 361, 365, 376, 385, 388, 392, 393, 396, 401, 405, 415, 428, 466, 491, 506, 634, 654, 683, 760, 860, 961, 964, 970, 1205, 1327, 1336, 1337, 1387, 1389, 1391, 1393, 1395 = P. B.–A. 545, 1397, 1398, 1400, 1404, 1415, 1418, 1476. Penfield Reef; Seaside Park; Cook's Point; Long Beach; The Gut; Pleasure Beach. July–Dec. Cystocarps, tetraspores and antheridia, July.

Griffithsia Bornetiana Farlow. 399, 443, 1542. Floating, Seaside Park; Stratford Point; Charles Island. Aug., Sept., Oct. "Charles Island, small tufts floated ashore, globose antheridia-bearing cells few; vegetative tapering branches and antheridial branches on the same frond; rhizoidal processes very abundant."

Callithamnion Baileyi Harv. 238, 244, 251, 391, 538, 560, 589, 613, 1044, 1202, 1221, 1223, 1406. Floating, Seaside Park; Woodmont; Charles Island; Long Beach; covering *Chondrus* and other algae, Penfield Reef; dredged at Stratford Shoal. Jan., May–Aug., Oct.–Dec.

C. byssoideum Arn. 665. Black Rock Beacon. July.

C. corymbosum (Eng. Bot.) Ag. 690. Floating, Long Beach. Aug.

C. roseum (Roth) Harv. 1550. Floating, Charles Island. Apr. Cystocarps and tetraspores.

C. tetragonum (With.) Ag. 1551. Floating, Charles Island, Apr.

Pleonosporium Borreri (Eng. Bot.) Näg. 52, 69, 372, 390, 625, 638, 645, 665a, 876, 1031, 1140, 1402, 1405. On muddy rocks at light and spindles, and at beacon, Penfield Reef; Floating, Seaside Park; Woodmont; Long Beach; Charles Island. July–Sept. Tetraspores, Aug., Sept.

Seirospora Griffithsiana Harv. 1030. Scooped up from rocks below low water, Black Rock Beacon. Aug.

Antithamnion Americanum (Harv.) Farlow. 239, 243, 267, 301, 559, 590, 786, 1076, 1348, 1446, 1485, 1486, 1499, 1511, 1543. Floating, Seaside Park; Woodmont; Charles Island. Jan.–May.

A. cruciatum (Ag.) Näg. 469, 473, 499, 536, 614, 839, 1167. On algae and stones, Seaside Park; Long Beach; Woodmont. May–Dec.

Rhodochorton Rothii (Eng. Bot.) Näg. 189, 256, 269. On rocks, Seaside Park. Nov., Feb., March. Tetraspores, Feb., March.

Ceramium Capri-Cornu (Reinsch) Farlow. 173, 231, 1058. Washed ashore on *Zostera*, harbor. June, Oct. "Only an autumnal form of *C. strictum*, growing on *Zostera*. Of this I am convinced."

C. circinatum (Kütz.) J. Ag. 637. On *Fucus*, Woodmont. July.

C. fastigiatum Harv. 472, 1141. On *Zostera*, Long Beach. Aug., Sept.

C. rubrum (Huds.) Ag. 75, 360, 371, 1483. Seaside Park; Woodmont. July, Aug., Jan., "Luxuriant but sterile, on *Fucus*."

C. rubrum var. *secundatum* (Lyng.) Harv. 1523. The Gut. July.

C. botryocarpum Griff. (*C. rubrum* var. *proliferum* J. Ag.) 1138, 1475, 1522 = P. B.-A. 894, 1524, 1525, 1526, 1527. The Gut. July, Aug. Cystocarps and tetraspores, July. "Tetrasporic plants much less proliferous than the cystocarpic."

C. strictum (Kütz.) Harv. 63, 71, 353, 358, 359, 363, 368, 369, 374, 378, 411, 432, 437, 495, 858, 1139. Yellow Mill Bridge; on sand-covered rocks, Seaside Park; on *Zostera*, Cook's Point; Norwalk shore. June–Aug. Tetraspores, July. "432 passing into the form of *C. Capri-Cornu*; curved branchlets just starting out."

C. tenuissimum (Lyng.) J. Ag. 468, 471. On *Agardhiella*, Seaside Park. Sept.

C. tenuissimum var. *arachnoideum* (J. Ag.) Farlow. 154, 677, 1137. Always on *Zostera*; Milford Point; Woodmont; Long Beach. Aug., Sept.

Spyridia filamentosa (Wulf.) Harv. 762, 1422. Woodmont. Aug., Sept.

Gloiosiphonia capillaris (Huds.) Carm. 25. Floating, Long Beach. June.

Melobesia Lejolisii Rosanoff. 1147. On *Zostera*, Pleasure Beach. Sept.

Lithothamnion laevigatum Foslie. 615. On schistose rock, near low water mark, Woodmont. June.

Corallina officinalis L. 477. Woodmont. Oct.

Hildenbrandia Prototypus Nardo. 179. Seaside Park. Nov.

CONNECTICUT FRESH WATER ALGAE.

Chroococcus cohaerens (Bréb.) Näg. 776. Among other algae, on abutment of Factory Pond dam. Dec.

Coelosphaerium Kützingianum Näg. 1052. With other algae, on moist rocks, Sage's Ravine, below first falls, Twin Lakes, Salisbury. Oct.

Haematococcus pluvialis (Grev.) Flotow. 621, 629, 705. On dripping stonework, Factory Pond dam. July, Sept.

Gloeocapsa violacea (Corda) Rab. 1435 = P. B.-A. 551. Gaylordsville. Oct. "On vertical face of moist limestone, east side of road and a few rods from it, a mile or so from the station on the road to Bull's Bridge."

Arthrospira Gomontiana Setchell. 43, 345, 1126 = P. B.-A. 155, 1130. Pool below Factory Pond. June, July.

Oscillatoria amphibia Ag. 954. With *O. tenuis*, on muddy bottom of Bruce's Brook. July.

O. limosa Ag. 31, 50, 597, 747, 932 = P. B.-A. 253b. Stream in Stratford; Great Falls of the Housatonic; ditch below Factory Pond, floating and attached to plants; Berkshire Mill Pond. "1481, forming a dark purple stratum on plants in running water, Pequonock River, below Factory Pond dam. Dec."

O. princeps Vauch. 161, 658 = P. B.-A. 2b, 850, 1413. West Branch of Bruce's Brook; Parrott's Pond; Fresh Pond, in company with *Lyngbya aestuarii*. July, Sept., Oct.

O. splendida Grev. 144, 775, 1063, 1149. Bed of Pequonnock River, in a still pool with decaying vegetable matter. Aug., Sept., Nov.

O. tenuis Ag. 143, 158, 164, 162, 584, 891, 954, 959, 1229. Floating, pool below Factory Pond; Housatonic River, on wall of quartz mill; Fresh Pond; Bruce's Brook. May-Oct.

O. tenuis var. *natans* (Kütz.) Gomont. 1163, 1482. Bruce's Brook. Oct., Dec.

Phormidium Corium (Ag.) Gomont. 743, 924, 934 = P. B.-A. 304. On stonework of dam at R. R. crossing, Bruce's Brook; on dam at Moody's Pond; Island Brook, below Housatonic R. R., on woodwork of dam. Apr., May, Oct.

P. favosum (Bory) Gomont. 51. Stratum adhering to rocks in shoal running water, Great Falls of the Housatonic, below Lovers' Leap. July.

P. Retzii (Ag.) Gomont. 710 = P. B.-A. 3c, 716, 946, 958, 1414. Stream below Paper Mill, Pequonnock River; Rooster River. June, July, Sept.

P. uncinatum (Ag.) Gomont. 660, 947, 1420. "Forming a purplish or copperish skin on stones in stream below dam at Moody's Pond"; Mill River. June, July, Sept.

Lyngbya ochracea (Kütz.) Thuret. 1062, 1333. Stream below paper mill, Factory Pond; outlet of Parrott's Pond. Oct., Nov.

Plectonema Wollei Farlow. 166. On stones in swift running water, Housatonic River, below Great Falls. Oct.

Schizothrix lardacea (Cesati) Gomont. 1227. On vertical surface of dripping rock, East Rock, New Haven. Nov.

S. coriacea (Kütz.) Gomont. 1429, 1431, 1437, 1453. On limestone, bank of Housatonic River, Gaylordsville. Apr., Oct.

Anabaena oscillarioides Bory. 718. With other *Cyanophyceae*, pool below Factory Pond. Sept.

Cylindrospermum majus Kütz. 445. Forming saccate investments of grass, *Utricularia*, etc., pool below Factory Pond. Sept.

Nostoc commune Vauch. 1436. On limestone, road near Gaylordsville. Oct.

N. microscopicum Carm. 1053. Sage's Ravine, Salisbury, below first falls. Oct.

N. parmelioides Kütz. 1160. On stones in brook, Mt. Carmel. Sept.

N. pruniforme Ag. 1145 = P. B.-A. 657. Twin Lakes, Salisbury. Aug. "In stagnant arm of lower lake cut off by R. R. near station. Mostly resting on bottom, attached when young to sticks, stones, etc., growing up to a diameter of about 2 inches."

Scytonema crispum (Ag.) Bornet. 192, 1158, 1225. On rock below Factory Pond; ditch at North Haven. Sept., Nov. "Oct. 2, 1898, *Scytonema crispum* has disappeared from the old station in North Haven."

S. Hofmanni Ag. 740. On old stump, shore of upper Twin Lake, Salisbury. Oct.

S. Myochrous (Dillw.) Ag. 697, 739, 1048. "On rocks in upper Twin Lake, near shore, submerged, but alive to some extent above submerged portion." Oct.

S. figuratum Ag. 1427, 1428, 1438, 1454, 1517 = P. B.-A. 857. Banks of the Housatonic, near Gaylordsville, in tufts or sheets on limestone. June, Oct.

S. ocellatum (Dillw.) Thuret. 698. Sage's Ravine, Salisbury, on dripping rocks. Aug.

Nostochopsis lobatus Wood. 1159. On stones in brook at Mt. Carmel. Sept.

Tolypothrix lanata (Desv.) Wartmann. 182, 191, 216, 500, 706, 1153. On *Fontinalis* in Pequonnock River, below Factory Pond dam; Lake Saltonstall, near New Haven. Sept.-Dec.

Stigonema mamillosum Ag. 354, 628. On damp rocks in Mill River, near Samp Mortar Rock; on stones in Pequonnock River. July.

S. minutum (Ag.) Hass. 1050. On submerged rocks in Plantain Pond, Salisbury. Oct.

S. panniforme (Ag.) Born. & Flah. 1052. On moist rocks, Sage's Ravine, below first falls, Salisbury. Oct.

Amphithrix janthina (Mont.) Born. & Flah. 1434. Coating stones in Island Brook, below R. R. Oct.

Calothrix Braunii Born. & Flah. 503, 885, 903, 1061. Forming a coating on stones, side stream of Pequonnock River, below Factory Pond dam. Oct.

C. fusca (Kütz.) Born. & Flah. 544. On *Batrachospermum vagum*, pool below Factory Pond dam. Oct.

C. parietina (Näg.) Thuret. 733, 734 = P. B.-A. 11, 742, 1228, 1347. On stone dam of Factory Pond; on dripping rock by R. R.

between Canaan and Twin Lakes, Salisbury; on dripping rock, East Rock, New Haven; on sandy ground, shore of Fresh Pond. Oct.–Dec.

Dichothrix gypsophila (Kütz.) Born. & Flah. 1425, 1439. Gaylordsville, rapids of Housatonic River, near Kent, on limestone, river shore; narrow form, incrustated. Oct.

D. Hosfordii (Wolle) Born. & Flah. 501, 508, 514, 957 = P. B.–A. 215b, 1197. On stones on border of pool below Factory Pond, Pequonnock River. June, July, Oct., Nov.

D. Orsiniana (Kütz.) Born. & Flah. 1124, 1131 = P. B.–A. 405. On stone work at base of Factory Pond dam. July.

Gloiostrichia Pisum (Ag.) Thuret. 736, 737. Twin Lakes, Salisbury, floating and on pond weeds. Oct.

Spirogyra bellis (Hass.) Cleve. 882. Pequonnock River, Turnbull. Oct.

S. nitida (Dillw.) Link. 619, 620, 630 = P. B.–A. 513, 643. Island Brook, below dam at R. R. "July 19, Last of the season."

S. varians (Hass.) Kütz. 582. Roadside near Brookfield. May.

S. sp.? 595, 600, 607, 632, 652. Fresh Pond. May–July. 595. "Grows in abundance, floating in thick patches, along with *Cladophora*, *Enteromorpha*, etc. Dissepiments not replicate; diameter of cells uniformly about 37μ ; length of cells 8–22 times the diameter; 1 or 2 spirals, making 2 or 3 to 10 or more turns; rarely 3 spirals." 607, "Spores seem to be forming in some cells without conjugation, after the manner described by DeBary (Die Conjugaten, p. 7, Pl. I. fig. 4). Sometimes 2 spores (?) in one cell; sporiferous (?) cells somewhat swollen, spores (those apparently nearest maturity) light buff colored, elliptical." 632, "In side pool from which I formerly took best specimens of *Monostroma latissimum*. Cells generally about 27 or 28μ in diameter, length generally 3–6 diameters, spirals 2 or rarely 3 turns, about 3 in a cell of full length. Dissepiments not replicate. Zygosporos ellipsoidal, $56\text{--}87\mu$ long by $31\text{--}37\mu$ wide. Female cell swollen just enough to contain zygosporos. With *Oscillatoria* which appears to be *O. princeps*. ?Whether this is not the same as 595. Water in this pool (which is now cut off from the main body by a sand bar) may be a little less salt; ?Whether this is the reason of its fruiting." ¹

Zygnema pectinatum var. *anomalum* (Hass.) Kirchn. 605. Pequonnock River, below Factory Pond dam. June.

Mougeotia robusta (DeBary) Wittr. 601, 606. Pequonnock River, below Factory Pond dam. June.

M. genuiflexa (Dillw.) Ag. 668 = P. B.-A. 312, 952. Peck's Mill, Putney. July, Aug.

Tetraspora bullosa (Roth) Ag. 194, 222. Side stream of Pequonnock River, below Factory Pond dam, on stones, sticks, etc. Nov., Dec.

T. bullosa forma *cylindrica* (Hilse) Rab. 520, 521, 525. On plants and stones in Parrott's Pond. Nov.

T. lubrica var. *lacunosa* (Duby) Chauv. 195, 199, 208. Side stream of Pequonnock River, below Factory Pond dam; Stillman's Brook. March, Nov. 199, "Narrow, string-like fronds up to the length of 2 feet or more."

Gloeocystis rupestris (Lyng.) Rab. 746. With *Calothrix fusca*, etc., on stone work of Factory Pond dam. Oct.

Conferva bombycina forma *minor* Wille. 572, 717 = P. B.-A. 621, 827. Stream running into Bruce's brook, near horse-car stable; stream below paper mill, No. Bridgeport, with *Microspora stagnorum*. Apr., May, Sept.

Microspora abbreviata (Rab.) Lagerh. 925. Bruce's Brook. Apr.

M. amoena (Kütz.) Rab. 531, 928a = P. B.-A. 616. Bruce's Brook; stream below paper mill; Dec., Apr.

M. crassior (Hansg.) Hazen. 928a. Stream below paper mill, with *M. amoena*. Apr.

M. stagnorum (Kütz.) Lagerh. 602, 604 = P. B.-A. 618, 717. "Streamlet leaking through bank below the dam, Pequonnock River; some of it 2 ft. or more long; with *Conferva bombycina*."

Stichococcus flaccidus (Kütz.) Gay. 431. On bark of Horse Chestnut tree, Pembroke St., Bridgeport. Aug.

Ulothrix zonata (Web. & Mohr) Kütz. 945 = P. B.-A. 19a. On stones, Mill River, near Samp Mortar Rock. June.

Stigeoclonium tenue? 603. Stream from paper mill, Factory Pond. June.

S. lubricum (Dillw.) Kütz. 811 = P. B.-A. 660. Little pond east of Yellow Mill Pond, near Stratford Cove. May.

S. fasciculare Kütz. 828 = P. B.-A. 67. Bruce's Brook. May.

S. flagelliferum Kütz. 1170, 1171 = P. B.-A. 408. On stones in swift water, Pequonnock River, in the new channel, below Factory Pond dam. Dec.

Draparnaldia glomerata (Vauch.) Ag. 203, 236, 246, 528, 549, 554, 1070. Side stream of Pequonnock River, below Factory Pond dam; Ash Creek. Nov.—Feb.

D. plumosa (Vauch.) Ag. 550, 551, 552. Stream below paper mill, at Factory Pond. Jan. Feb.

Chaetophora incrassata (Huds.) Hazen. 145, 184, 193, 200, 205, 211, 217, 223, 237, 409, 446, 527, 553, 1204. On stones, pool and side stream of Pequonnock River, below Factory Pond dam. Jan., Feb., July—Dec.

C. incrassata forma **draparnaldioides** (Wittr. & Nordst.) nov. comb. 286. *C. Cornu Damae* (Roth) Ag. β *draparnaldioides* Nordst. & Wittr. Stream in swamp, west of Stillman's Brook. March.

C. pisiformis (Roth) Ag. 408, 447, 661. On grass and stones, side stream of Pequonnock River, etc.; on stones in mill race below Moody's Pond. July—Sept.

Aphanochaete vermiculoides Wolle. 557a. On *Hyalotheca dissiliens*, Stratford. March.

Bulbochaete intermedia DeBary, 686 = P. B.—A. 973. On grass, etc., pool by Rooster River, near Spooner's farm. Aug.

Oedogonium crenulato-costatum Wittr. 836. In little pond east of Yellow Mill Pond, near Stratford Avenue. July.

Trentepohlia aurea (L.) Mart. 1055, 1424. Rocks by roadside near Hammerton; limestone rocks on river shore, Housatonic River, near Gaylordsville. Oct.

T. Iolithus (L.) Wittr. 1452. On northerly side of rocks, with lichens, Gaylordsville. Apr.

Rhizoclonium hieroglyphicum var. *macromeres* Nordst. 1162. Fitch's Pond, Cheshire. Sept.

R. lacustre forma *Americanum* Wille. 656, 657 = P. B.—A. 624. Attached to stones, Pequonnock River, below Factory Pond dam, growing to a length of 2 or 3 feet. July.

Cladophora callicoma Kütz. 347. Great Falls of the Housatonic, Still River station, Lanesville, on stones in rapids, below Lovers' Leap. June.

C. glomerata (L.) Kütz. 349. Still River station, Lanesville, on stones in swift water, just below the dam at silex mill. June.

Vaucheria aversa Hass. 670 = P. B.—A. 475. Mill River, near Samp Mortar Rock. Aug.

V. geminata (Vauch.) DC., type and var. *racemosa* (Vauch.) Walz. 567, 570, 571. Ash Creek, below mill at Moody's Pond. Apr.

Vaucheria sessilis (Vauch.) DC. 581. Brookfield. May.

Batrachospermum anatinum Sirdt.? "A single frond among Bats collected in Bruce's Brook, north of R. R., Apr. 20. Beautiful bluish green."

B. Boryanum Sirdt. 3, 7, 10, 16, 187, 196, 202, 206, 210, 212, 219, 228, 248, 252, 275, 283, 556. Mouth of little stream emptying into the east side of Berkshire Mill Pond; side stream of Pequonnock River, below Factory Pond dam. Feb., May, Nov., Dec.

B. Corbula Sirdt. 11 = P. B.-A. 184. In a little stream running through swamp near old quarry, northwest of poorhouse, May 11. "May 30, collected in same spot as May 11. Hunted the stream a long way. Could find none except in one spot within the space of a yard." 259, 292. On sticks in still water, upper part of pool below Factory Pond dam. Mar.-May.

B. ectocarpum Sirdt. 5, 289 = P. B.-A. 183. In side stream of Pequonnock River, below Factory Pond dam; Island Brook, near mouth. Jan.-March.

B. moniliforme var. *typicum* Sirdt. 22 = P. B.-A. 180. Island Pond Brook. May.

B. moniliforme var. *chlorosum* Sirdt. 2, 165, 186, 188, 197, 198, 201, 207, 209, 213, 215, 220, 226, 249. Side stream of Pequonnock River, below Factory Pond dam. Oct., Jan. "Oct. 5, the first Bat I have found here this season; could see none a week ago."

B. pyramidale Sirdt. 933 = P. B.-A. 186. On old sticks in still water, pool below Factory Pond dam. May.

B. vagum Ag. 8, 204, 214, 218, 224, 235, 247, 526, 631, 835, 884, 902, 1166. Outlet of little pond near paper mill, below Factory Pond dam. Oct.-Feb., Apr., June, July.

B. virgatum Sirdt. 15, 253, 270, 276, 284, 291, 825, 1165. Small stream running under R. R., a little way east of Stratford depot; Island Brook; Ash Creek, below saw mill; Pequonnock River, below Factory Pond dam. Nov., Feb.-May.

Lemanea fucina var. *rigida* (Sirdt.) Atk. 45, 350. Island Brook; Great Falls of the Housatonic, on rocks in the natural dam at the crest. June.

Tuomeya fluviatilis Harv. 24, 41, 44, 64, 516, 576, 883, 956, 1164, 1232. Pequonnock River; Island Brook; Mill River, near Samp Mortar Rock. May-July, Oct.-Dec. "Nov. 15, in great abundance in Pequonnock River, near old mill just above Trumbull line, at falls."

NEWFOUNDLAND, JULY 13-30, 1897.

ST. JOHN'S, JULY 13-16.

1273. *Nostoc muscorum* Ag. Signal Hill.

1274 = P. B.-A. 414. *Pylaiella littoralis* (L.) Kjellman. In pools and on rocks between tide marks, shore outside of entrance to the harbor; both forms of sporangia on the same individual.

1275 = P. B.-A. 982, 1276. *Cladophora Hystrix* Stromf. On rocks between tide marks, outside shore.

1277. *Fucus* sp.? "On rocks between tide marks, or at least where wet by spray."

1278. *Dictyosiphon hippuroides* (Lyng.) Aresch. Young plants in rock pools.

1279, 1281. *Rhodomela* sp? In rock pools in narrows, outside the harbor.

1280. *Polysiphonia urceolata* (Lightf.) Grev. On rocks in harbor near narrows.

1283. *Codiolum longipes* Foslie. Coating rocks within the narrows.

1284. *Phyllitis zosterifolia* Reinke. Coating rocks on ocean shore, between tide marks, outside the harbor.

1285. *Monostroma Groenlandicum* J. Ag. On rocks, ocean shore, north of entrance to harbor.

1286. *Halosaccion ramentaceum* (L.) J. Ag. On rocks in harbor near narrows.

1287. *Alaria esculenta* Grev? On rocks below the cliff, ocean shore, north of narrows.

1288. *Chorda tomentosa* Lyng. North side of harbor, near the narrows, attached to stones.

1289 = P. B.-A. 480. *Elachista lubrica* Rupr. On *Halosaccion*, 1286.

1290 = P. B.-A. 406. *Monostroma undulatum* var. *Farlowii* Rosenv. On rocks and on other algae, between tide marks in the narrows, south side.

1291. *Enteromorpha minima* Näg. On rocks between tide marks near narrows, north side.

1292. *Dictyosiphon foeniculaceus* (Huds.) Grev. Mostly epiphytic on *Chordaria flagelliformis*, near narrows.

1293. *Porphyra miniata* Ag. Very abundant.

TOPSAIL, ON CONCEPTION BAY, JULY 17.

1294. *Cladophora lanosa* var. *uncialis* (Harv.) Thuret. On rocks at low water.

1295. *Ectocarpus confervoides* (Roth) LeJolis. On algae.

1296. *Phyllitis fascia* (Fl. Dan.) Kütz. Rocks near low water mark.

1297. *Lithothamnion glaciale* Kjellm. Lying free near low water mark and below.

WINDSOR LAKE, JULY 19.

1298. *Stigonema mamillosum* Ag. On rocks in shoal water.

HARBOR GRACE, JULY 21.

1299. *Cladophora* sp?

1300. *Corallina officinalis* L.

1301. *Ralfsia deusta* Aresch.

1302. *Rhodymenia palmata* (L.) Grev.

1303. *Ptilota pectinata* (Gunner) Kjellman.

1308. *Hormiscia penicilliformis* (Roth) Fries. On rocks between tides.

1309. *Elachista* sp? On *Fucus*.

QUIDI VIDI, JULY 26.

1310. *Porphyra laciniata* (Lightf.) Ag. On rocks between tides.

1311. *Calothrix scopulorum* (Web. & Mohr) Ag. On rocks between tides.

1312 = P. B.-A. 337. *Porphyra miniata* Ag. On rocks at and below low water.

PETTY HARBOR, JULY 28.

1313. = P. B.-A. *Dictyosiphon hippuroides* (Lyng.) Aresch.

1314. *Chordaria flagelliformis* (Fl. Dan.) Ag. With 1313.

1315. *Hormiscia penicilliformis* (Roth) Fries. Rocks below tide marks.

ST. JOHN'S, JULY 29.

1316. *Codiolum longipes* Foslie. Rocks in narrows.

TORBAY, JULY 30.

1318. *Porphyra linearis* Grev. "Up to 2 feet in length and from $\frac{1}{8}$ to 1 inch or a little more in width. Strong tendency to shut up on the median line. Fronds entire, attached to rocks by small stipe at the base. Between tide marks where surf beats upon precipitous rocks."

1319. *Phormidium Retzii* (Ag.) Gomont. On moss in stream, swift water, running into Torbay harbor.

SENECIO BALSAMITAE, Muhl., var. **firmifolius**, Greenman, n. var. Stems 0.8 to 2 dm. high, more or less tufted: lower leaves mostly short-petioled, elliptic-oblong to subrotund, 0.5 to 4 cm. long, 5 to 20 mm. broad, crenate-dentate to sublyrately pinnatifid, thick and firm in texture, at first, as well as the stem, white tomentulose, but soon glabrate; upper stem-leaves much reduced and often prolonged into a linear entire attenuation: involucre and technical characters of the head like the species. — In red limestone detritus, crest of Les Murailles, Percé, Gaspé County, Quebec, 17 August 1904, *J. F. Collins, M. L. Fernald & A. S. Pease* (type, hb. Gray); also in limestone detritus, Mont Rouge, Percé, 23 July 1905, *J. F. Collins & M. L. Fernald* (hb. Gray). Specimens secured by Messrs. Collins and Fernald at Cap Barré, Percé, 23 July 1905, are distinctly intermediate between the variety and typical examples of the species. The variety is distinguished chiefly by the short relatively broad leaves and their thick firm texture. — J. M. GREENMAN, Field Columbian Museum, Chicago.

A PALE FORM OF AVENA STRIATA.—*Avena striata* Michx. has the empty glumes and often the flowering glumes strongly tinged with purple — so much so as to have received from Torrey the name *Trisetum purpurascens*. On some of the mountains of Maine and eastern Quebec, however, the prevailing form of the plant quite lacks this purple coloring which is so characteristic of the species, and has instead whitish or pale straw-colored empty glumes and pale flowering glumes. The plant seems to have no other distinguishing character, but in the regions where it occurs it is so constant and characteristic as to merit the distinctive name: —

AVENA STRIATA Michx., forma **albicans**, f. nov. Glumis externis albicantibus vel flavescentibus haud purpurascensibus, glumis fertilibus flavescentibus vel fulvis.— QUEBEC, abundant on mossy tableland, altitude 900–1050 meters, Mt. Albert, August 9, 1905 (*Collins & Fernald*, no. 26); limestone-conglomerate cliffs, Bic, July 16, 1904 (*Collins & Fernald*): MAINE, slides, west wall, North Basin, and Saddle Brook, Mt. Katahdin, July 13, 1900 (*Williams & Fernald*). — M. L. FERNALD, Gray Herbarium.